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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,454	03/19/2004	Monte Davis	30160-RA	7273

7590 05/22/2007

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EXAMINER	
SAADAT, CAMERON	
ART UNIT	PAPER NUMBER
3714	

MAIL DATE	DELIVERY MODE
05/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/804,454	DAVIS, MONTE	
	Examiner	Art Unit	
	Cameron Saadat	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

In response to amendment filed 1/3/2007, claims 1-49 are pending in this application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kehoe (US 6,231,500) in view of Aguilar (US 4,632,126)

Regarding claim 1, Rehoe discloses a vocal training device comprising: means for tactile biofeedback, the tactile biofeedback adapted to assist a vocal trainee achieve a desired vocal output via auditory, visual, and physical biofeedback comparators; wherein the user adjusts the vocalized pitch to match a target pitch by responding to the biofeedback. See col. 4, line 16 – Col. 5, line 27; col. 6, 24-35. Rehoe discloses all of the claimed subject matter with the exception of explicitly disclosing that the biofeedback reference sources are nearly simultaneous. However, Aguilar teaches a biofeedback method and system, wherein multiple sources of biofeedback are simultaneously presented in order to provide

redundancy and increasing the likelihood that one of them can be attended to. See Aguilar, Col. 4, lines 3-38). Thus, in view of Aguilar, it would have been obvious to one of ordinary skill in the art to modify the biofeedback described in Rehoe, by providing multiple biofeedback sources simultaneously, in order to provide redundancy and increasing the likelihood that one of them can be attended to by a user.

Regarding claims 2 and 21, Rehoe discloses an interactive unit adapted to compare and analyze a vocal trainee generated note against a target note generated by the interactive unit. See col. 7, 16-21.

Regarding claims 3 and 22, Rehoe discloses a vocal training device wherein the vocal trainee generated note is conveyed to the interactive unit via a microphone. See col. 6, 61-63.

Regarding claims 4 and 23, Rehoe discloses a vocal training device wherein the target note is audibly generated by the interactive unit by selecting a corresponding target note key. See col. 7, 12-21.

Regarding claim 5, Rehoe discloses a vocal training device further comprising means for auditory biofeedback, the auditory biofeedback adapted to assist the vocal trainee achieve a desired vocal output. See col. 7, 12-23.

Regarding claims 6 and 24, Rehoe discloses a vocal training device wherein the auditory biofeedback means is an earpiece. See col. 7, 23-24.

Regarding claims 7 and 25, Rehoe discloses a vocal training device wherein audibly generated the target note is conveyed to the earpiece for audible reception and biofeedback to the vocal trainee. See col. 9, 32-39.

Regarding claims 8 and 26, Rehoe discloses a vocal training device wherein the vocal trainee generated note is conveyed to the interactive unit, compared and analyzed against a target note, and subsequently looped back to the earpiece for audible reception and biofeedback to the vocal trainee. See Col. 6, line 59 – Col. 7, line 23.

Regarding claims 9 and 27, Rehoe discloses a vocal training device further comprising means for visual biofeedback, the visual biofeedback means adapted to assist the vocal trainee achieve a desired vocal output. See Col. 7, 26-27.

Regarding claim 10, Rehoe discloses a vocal training device wherein the visual biofeedback means is a visual graphical interface for visually conveying vocal training information to the vocal trainee. See Col. 7, 26-27.

Regarding claims 11 and 28, Rehoe discloses a vocal training device wherein the target note is visually generated on the visual graphical interface by the interactive unit by selecting a corresponding target note key. See Col. 7, 26-27; Col. 5, lines 8-28.

Regarding claim 12, Rehoe discloses a vocal training device wherein the visually generated target note is in Roman alphabet format corresponding to the target note. Col. 5, lines 19-28.

Regarding claim 13, Rehoe discloses a vocal training device wherein visually generated target note is in the form of an indicator light corresponding to the target note. See Col. 7, 26-27.

Regarding claims 14 and 29, Rehoe discloses a vocal training device wherein the vocal trainee generated note is conveyed to the interactive unit, compared and analyzed against the target note, and subsequently displayed in Roman alphabet format on the visual graphical interface for visual comparison against the target note also displayed in Roman alphabet format on the visual graphical interface. See Col. 5, lines 8-28.

Regarding claims 15 and 30, Rehoe discloses a vocal training device wherein the vocal trainee generated note is conveyed to the interactive unit, compared and analyzed against said target note, and subsequently displayed as an indicator light on the visual graphical interface for visual comparison

against the target note also displayed as an indicator light on the visual graphical interface. See Col. 7, 26-27; Col. 5, lines 8-28.

Regarding claims 16 and 31, Rehoe discloses a vocal training device wherein the tactile biofeedback means is a physical vibration sensed by the vocal trainee. See Col. 6, 24-34.

Regarding claims 17 and 32, Rehoe discloses a vocal training device wherein said tactile biofeedback means is a vibrational earpiece. See Col. 6, 24-34.

Regarding claims 18 and 33, Rehoe discloses a vocal training device wherein the target note is translated into a physical vibration by the interactive unit by selecting a corresponding target note key, and wherein the physical vibration is subsequently conveyed to the vocal trainee for physical or tactile perception. See Col. 6, 24-34.

Regarding claims 19 and 34, Rehoe discloses a vocal training device wherein adjusting the vocal trainee generated note to match the target note, and thus minimize discordance between same, results in a seemingly corresponding diminishment of the physical vibration sensed by the vocal trainee. See Col. 6, 24-34.

Regarding claim 20, Rehoe discloses a vocal training device comprising: means for tactile biofeedback; means for auditory biofeedback; and, means for visual biofeedback, wherein the tactile biofeedback means, the auditory biofeedback means and the visual biofeedback means are adapted to assist a vocal trainee achieve a desired vocal output. (See Col. 6, 24-34; col. 7, 26-27; col. 7, 12-23) via auditory, visual, and physical biofeedback comparators; wherein the user adjusts the vocalized pitch to match a target pitch by responding to the biofeedback. See col. 4, line 16 – Col. 5, line 27. Rehoe discloses all of the claimed subject matter with the exception of explicitly disclosing that the biofeedback reference sources are nearly simultaneous. However, Aguilar teaches a biofeedback method and system,

wherein multiple sources of biofeedback are simultaneously presented in order to provide redundancy and increasing the likelihood that one of them can be attended to. See Aguilar, Col. 4, lines 3-38). Thus, in view of Aguilar, it would have been obvious to one of ordinary skill in the art to modify the biofeedback described in Rehoe, by providing multiple biofeedback sources simultaneously, in order to provide redundancy and increasing the likelihood that one of them can be attended to by a user.

Regarding claim 35, Rehoe discloses a vocal training device, wherein adjusting the vocal trainee generated note to match the target note results in the vocal trainee generated note being reassigned a note value displayed in the Roman alphabet format corresponding to or matching the target note as displayed in the Roman alphabet format on the visual graphical interface. See Col. 5, lines 8-28.

Regarding claim 36, Rehoe discloses a vocal training device, wherein adjusting the vocal trainee generated note to match the target note results in the vocal trainee generated note being reassigned a note value displayed as the indicator light corresponding to or matching the target note as displayed as another said indicator light on said visual graphical interface. See col. 4, 52-63.

Regarding claim 37, Rehoe discloses a vocal training device, wherein adjusting the vocal trainee generated note to match the target note results in a corresponding and progressive change in color of the indicator light to match a stagnate color of another indicator light corresponding to the target note as displayed on the visual graphical interface. See col. 4, 52-63.

Regarding claim 38, Rehoe discloses a vocal training device, wherein adjusting the vocal trainee generated note to match the target note results in a corresponding and progressive change in color of a series of indicator lights to match a stagnate color of an indicator light corresponding to the target note as displayed on the visual graphical interface. See col. 7, 26-27; col. 4, 52-63.

Regarding claim 39, Rehoe discloses a vocal training device, wherein adjusting the vocal trainee generated note to match the target note, and thus minimize discordance between same, results in a seemingly corresponding diminishment of the physical vibration sensed by the vocal trainee. See col. 6, 23-35.

Regarding claim 40, Rehoe discloses a vocal training device, further comprising an external speaker system 9 for providing the vocal trainee with additional auditory biofeedback.

Regarding claim 41, Rehoe discloses a vocal training device, further comprising an means for recoding the vocal trainee's vocal training session with microphone 1.

Regarding claim 42, Rehoe discloses a method of vocal training, comprising the steps of: generating a vocal pitch; and adjusting the vocal pitch to match a target note translated into a sensed biofeedback, the sensed biofeedback selected from the group consisting of visual biofeedback, auditory biofeedback, tactile biofeedback, and combinations thereof. See Col. 6, 24-34; col. 7, 26-27; col. 7, 12-23. Rehoe discloses all of the claimed subject matter with the exception of explicitly disclosing that the biofeedback reference sources are nearly simultaneous. However, Aguilar teaches a biofeedback method and system, wherein multiple sources of biofeedback are simultaneously presented in order to provide redundancy and increasing the likelihood that one of them can be attended to. See Aguilar, Col. 4, lines 3-38). Thus, in view of Aguilar, it would have been obvious to one of ordinary skill in the art to modify the biofeedback described in Rehoe, by providing multiple biofeedback sources simultaneously, in order to provide redundancy and increasing the likelihood that one of them can be attended to by a user.

Regarding claim 43, Rehoe discloses a method of vocal training: obtaining a vocal training device, comprising: means for tactile biofeedback; means for auditory biofeedback; and, means for visual biofeedback; selecting a target note for vocal reproduction; generating an auditory pitch corresponding to the pitch of said target note; audibly recognizing the auditory pitch via the auditory biofeedback means;

visually recognizing the auditory pitch via the visual biofeedback means; generating a physical vibration corresponding to the frequency of the target note; tactilely recognizing the physical vibration via the tactile biofeedback means; producing said auditory pitch into a vocalized pitch; sensing the discordant biofeedback between said auditory pitch and the vocalized pitch via said tactile biofeedback means; and, adjusting the vocalized pitch to match said auditory pitch by minimizing the discordant biofeedback as recognized by a seemingly corresponding diminishment of the physical vibration. See Col. 6, 24-34; col. 7, 26-27; col. 7, 12-23.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 44-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kehoe (USPN 6,231,500) in view of Shames et al. (USPN 4,685,448; hereinafter Shames).

Regarding claims 44-49, Kehoe teaches the feature of generating a square wave at a vibrating frequency and providing it to a user's ear. See col. 6, lines 23-35. Kehoe does not specifically describe the structure of the vibration device provided to the user's ear and does not specifically disclose the

feature of providing a chamber having a vibratory membrane for creating vibration. However, it is the examiner's position that the feature of providing a chamber having a vibratory member in combination with a vocal training device is old and well known for providing an interface that transfers vibration signals from the training device to a user. In addition, Shames teaches a vocal training device having a vibration feedback device comprising an elastic, vibration transmitting material for transferring vibrations to a user and thereby providing haptic feedback. Thus, in view of Shames, it would have been obvious to one of ordinary skill in the art to modify the vibration-generating device described in Kehoe, by providing a chamber having a vibratory member for providing an interface that transfers vibration signals from the training device to a user.

Response to Arguments

Applicant's arguments with respect to claims 1-49 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cameron Saadat whose telephone number is (571) 272-4443. The examiner can normally be reached on M-F 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert E. Pezzuto can be reached on (571) 272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cameron Saadat
May 14, 2007

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